Corbett maths

Solving Quadratics: Factorising 1

Video 266 on www.corbettmaths.com

Examples

Workout

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Question 1: Solve each of the equations below

(a) $(x - 1)(x - 3) = 0$

(b) $(y - 4)(y - 9) = 0$

(c) $(m + 1)(m + 6) = 0$

(d) $(x - 3)(x + 2) = 0$

(e) $(t + 7)(t - 3) = 0$

(f) $(k - 10)(k + 9) = 0$

(g) $(w + 5)(w + 11) = 0$

(h) $(y - 8)(y - 2) = 0$

(i) $(x + 3)(x - 9) = 0$

Question 2: Solve each of the equations below

(a) $x^2 + 6x + 8 = 0$

(b) $x^2 + 7x + 12 = 0$

(c) $y^2 + 7y + 10 = 0$

(d) $y^2 + 3y - 4 = 0$

(e) $x^2 - 2x - 8 = 0$

(f) $m^2 - 7m + 12 = 0$

(g) $y^2 - 10y + 25 = 0$

(h) $y^2 - 4y - 45 = 0$

(i) $x^2 - x - 56 = 0$

(j) $y^2 + 10y + 24 = 0$

(k) $x^2 + 9x + 18 = 0$

(l) $x^2 + 23x + 22 = 0$

(m) $y^2 - 13y + 22 = 0$

(n) $x^2 + x - 12 = 0$

(o) $m^2 - 6m - 27 = 0$

(p) $x^2 - 11x + 18 = 0$

(q) $y^2 - 14y + 48 = 0$

(r) $x^2 - 15x + 56 = 0$

(s) $m^2 - m - 56 = 0$

(t) $y^2 + 22y + 96 = 0$

(u) $k^2 - 18k - 88 = 0$

(v) $x^2 - 38x + 72 = 0$

(w) $x^2 + 14x - 51 = 0$

(x) $y^2 + 32y + 240 = 0$

(y) $g^2 - 12g - 64 = 0$

(z) $y^2 + 22y + 121 = 0$

Question 3: Solve each of the equations below

(a) $(y - 5)(y + 5) = 0$

(b) $(x + 2)(x - 2) = 0$

(c) $(m - 9)(m + 9) = 0$

Question 4: Solve each of the equations below

(a) $x^2 - 9 = 0$

(b) $y^2 - 100 = 0$

(c) $w^2 - 1 = 0$

(d) $k^2 - 144 = 0$

(e) $x^2 - 64 = 0$

(f) $c^2 - 0.25 = 0$

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Question 5: Solve each of the equations below

(a) $x^2 + 2x = -1$ (b) $y^2 + 8y + 10 = 3$ (c) $x^2 = 7x - 12$

(d) $y^2 + 6y + 15 = 3 - 7y$ (e) $x^2 - x - 8 = 2x + 2$ (f) $2x^2 - 14x + 49 = x^2$

(g) $-2x^2 + x - 1 = -x^2 - 5x + 8$ (h) $11x^2 - 105 = 10x^2 + x + 105$

Question 6: Solve each of the equations below

(a) $\dfrac{3}{x-4} = x - 2$ (b) $\dfrac{x+3}{4} = \dfrac{3}{x-1}$ (c) $\dfrac{45}{x^2} - \dfrac{4}{x} - 1 = 0$

Apply

Question 1: Alex is w years old.
His sister Claudia is three years younger than Alex.
The product of their ages is 180.



(a) Set up an equation to represent this information.
(b) Solve your equation from (a) to find Alex's age.

Question 2: A rectangular field is 10m longer than wide.
The area of the field is $2000m^2$.
Find the perimeter of the field.

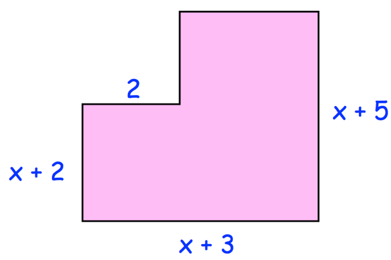


Question 3: A triangle has an area of $85cm^2$.
The height of the triangle is 7cm longer than the base of the triangle.

Find the lengths of the height and the base of the triangle.

Question 4: Two positive numbers, which have a difference of 3, are squared.
The difference in the results is 81.
Find the two numbers.

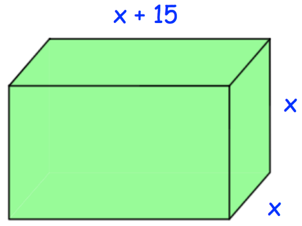
Question 5: The area of the shape is $74cm^2$.
Find the perimeter of the shape.



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Question 6: The surface area of this cuboid is $3600cm^2$



(a) Show $x^2 + 10x - 600 = 0$

(b) Find x

(c) Find the volume of the cuboid.

Question 7: $$\left(2^{x-8}\right)^{x-10} = 8$$

Find the possible values of x

Question 8: There are x apples in a crate.
4 of the apples are bad.

Joanne chooses two apples from the crate, without replacement.
The probability she selects two bad apples is $^1/_{11}$

(a) Prove $x^2 - x - 132 = 0$
(b) Find x, the number of apples in the crate.

Answers

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